

**REMARKS**

Claim 10 is amended to correct a clerical error and is definite under 35 USC §112, second paragraph.

Claims 12, 13, and 14 are added to claim the invention in alternative language.

The Office Action fails to show that claims 1 and 9 are anticipated under 35 USC §102(e) by US patent number 6,161,196 to Tsai ("Tsai"). The Office Action fails to show complete correspondence between the claim limitations and elements of Tsai, and therefore, fails to establish that the claims are anticipated.

Claims 1 and 9 include limitations that relate to compiling program source code into first and second sets of object code using first and second compilers, respectively. The first set of object code is executed, and upon detecting an error in execution in the first set of object code, execution is resumed using the second set of object code. The claims include further limitations that relate to generation of checkpoint code and storing state information in executing the checkpoint code. The Office Action fails to show that these limitations are identically shown by Tsai.

For example, the Office Action is mistaken in alleging that "each backend inherently compiles the program source code into respective object code." The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original) (MPEP 2112). The Office Action fails to show that each backend necessarily compiles the program source code into respective object code. For example, the Office Action fails to establish that Tsai does not implement an alternative in which only one compiler is used to generate object code and

copies of the object code are installed and run on the Tsai's various backends. Furthermore, Tsai's description appears to suggest that copies of a program are run (col. 9, l. 64 – col. 10, l. 8), in which case each copy is from a single compiler.

The claims include further limitations that relate to resuming execution of the program using the second set of object code upon detecting an error in execution of the first set of object code. The Office Actions does not show that these limitations are identically shown in Tsai's col. 8, ll. 49-61. As this section of Tsai clearly states, the target program on the machine with the erroneous backend is terminated and a new target program is initiated on the machine using checkpoint data. As Tsai later explains, the newly started program is not from a second compiler. Tsai's newly started program is simply a copy of the target program (col. 9, l. 64 – col. 10, l. 8). Thus, Tsai does not resume execution using a second set of object code as claimed.

The Office Action further fails to show that claims 2-8 and 10-11 are unpatentable under 35 USC §103(a) over Tsai in view of US patent 5,590,277 to Fuchs et al. ("Fuchs"). The rejection is respectfully traversed because the rejection fails to show that all the limitations are either shown or suggested, the alleged motivation for combining Fuchs with Tsai is improper, and the rejection fails to show a reasonable likelihood of successfully combining the teachings. Therefore, *prima facie* obviousness has not been established.

Claim 2 depends from claim 1 and includes further limitations that relate to initially re-executing the first set of object code upon detecting an error, and resuming execution using the second set of object code if the first set of object code fails in re-execution. The Office Action is mistaken in the allegation that Fuchs teaches these limitations. The cited section appears to teach a progressive recovery algorithm in which repeated faults of a process are counted and different recovery actions are taken based on the number of time the same fault occurs. The final action appears to be to restart and reinitialize the system (col. 15, l. 48 – col. 16, l. 10; col. 17, ll. 26-31). There appears to be no apparent teaching of the switch from failed re-execution of the first set of object code to executing a second set of object code from a second compiler. No teaching by Fuchs of a second set of object code being from a second compiler is cited by the Office Action, and as explained above Tsai teaches starting a copy of the program. Therefore, the Office Action fails to show all the limitations of claim 2.

The alleged motivation for modifying Tsai with the teachings of Fuchs does not support *prima facie* obviousness. The alleged motivation simply states that this

"modification would be obvious because one of ordinary skill in the art would be motivated to debug the faulty program." No explanation is provided nor is it apparent how debugging a faulty program would be provided by including Fuch's progressive recovery algorithm in Tsai's multi-backend system. Furthermore, This alleged motivation is insufficient because it is merely a broad, conclusory statement of a speculative function. The alleged motivation lacks clear and particular reasons that would lead one of ordinary skill in the art to combine specific teachings of Fuchs with Tsai. Addressing the "rigorous ... requirement for a showing of the teaching or motivation to combine prior art references," the Court of Appeals for the Federal Circuit has stated:

We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, (citations omitted), although "the suggestion more often comes from the teachings of the pertinent references," *Rouffet*, 149 F.3d at 1355, 47 USPQ2d at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular. *See, e.g., C.R. Bard*, 157 F.3d at 1352, 48 USPQ2d at 1232. Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence." (citation omitted) *In re Dembiczak*, 175 F.3d 994, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999).

The alleged motivation is merely a broad conclusory statement of general applicability, and no evidence is provided to suggest the combination. Therefore, the alleged motivation is insufficient to support *prima facie* obviousness.

The rejection further fails to show that Tsai could be successfully modified with the teachings of Fuchs. For example, Tsai uses modular redundancy to provide fault tolerance (title) apparently because "other conventional schemes use algorithm-based detection methods that are generally not applicable to many types of programs." (col. 1, ll. 61-63). Thus, Tsai teaches away from modification using an algorithm such as Fuchs' progressive recovery algorithm. For at least the reasons set forth above, *prima facie* obviousness is not established for claim 2 and claims depending therefrom.

Claim 3 depends from claim 2 and includes further limitations that relate to re-executing the first set of object code a selected number of times before resuming execution using the second set of object code. As explained above, the Office Action fails to show that Fuchs resumes execution of any such second set of object code. Thus, even if Fuchs retries a faulty process, neither Fuchs nor Tsai suggests resuming execution of a second set of object code which was generated from a second compiler.

Claim 4 includes further limitations that relate to the first and second sets of object code. Thus, for at least the reasons set forth above the Office Action does not establish a *prima facie* case of obviousness.

Claim 5 includes the limitations of claim 1 and further specifies selecting between the first and second sets of object code in resuming execution. The Office Action fails to show a teaching of these limitations by either Tsai or Fuchs. The apparent reasoning provided in the Office Action is, "Fuchs teaches selecting the first set of object code in resuming execution of the program (column 15, lines 48-67 to column 16, lines 1-10)." The alleged motivation states, "It would have been obvious ... to modify the method disclosed by Tsai to include selecting the first set of object code in resuming execution of the program using the teaching of Fuchs [because] one of ordinary skill in the art would be motivated to debug the faulty program." It is respectfully submitted that the Office Action appears to ignore the claimed aspect of selecting between the first and second sets of object code. No evidence is provided from either reference to suggest that both a first and a second set of object code are considered in making a selection. Furthermore, the Office Action fails to provide evidence that shows either Tsai or Fuchs teaches first and second sets of object code as claimed. The alleged motivation is also conclusory and improper. Therefore, *prima facie* obviousness is not established for claim 5.

Claims 6-8 depend directly or indirectly from claim 5 and include limitations comparable to those discussed above. Therefore, for at least the reasons set forth above the Office Action fails to establish a *prima facie* case obviousness for these claims.

Claims 10 and 11 include limitations comparable to those of claim 5, and therefore, *prima facie* obviousness is not established for these claims.

Withdrawal of the rejection and reconsideration of the claims are respectfully requested in view of the remarks set forth above.

Respectfully submitted,

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